

RAW SEQUENCE LISTING  
PATENT APPLICATION US/08/959,013DATE: 07/15/98  
TIME: 13:54:26

INPUT SET: S27454.raw

This Raw Listing contains the General  
Information Section and up to the first 5 pages.

## SEQUENCE LISTING

ENTERED

## (1) General Information:

(i) APPLICANT: O'Malley, Bert W.  
Tsai, Ming-Jer  
Ledebur, Harry C. Jr.  
Kittle, Joseph D. Jr.

(ii) TITLE OF INVENTION: MODIFIED STEROID  
HORMONES FOR GENE  
THERAPY AND METHODS  
FOR THEIR USE

(iii) NUMBER OF SEQUENCES: 14

## (iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Lyon & Lyon  
(B) STREET: 633 West Fifth Street  
Suite 4700  
(C) CITY: Los Angeles  
(D) STATE: California  
(E) COUNTRY: U.S.A.  
(F) ZIP: 90071-2066

## (v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: 3.5" Diskette, 1.44 Mb  
storage  
(B) COMPUTER: IBM Compatible  
(C) OPERATING SYSTEM: IBM P.C. DOS 5.0  
(D) SOFTWARE: Word Perfect 5.1

## (vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: 08/959,013  
(B) FILING DATE: October 28, 1997  
(C) CLASSIFICATION:

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48 (vii) PRIOR APPLICATION DATA:  
49  
50 (A) APPLICATION NUMBER:  
51 (B) FILING DATE:  
52  
53  
54  
55 (viii) ATTORNEY/AGENT INFORMATION:  
56  
57 (A) NAME: Warburg, Richard J.  
58 (B) REGISTRATION NUMBER: 32,327  
59 (C) REFERENCE/DOCKET NUMBER: 226/286  
60  
61  
62 (ix) TELECOMMUNICATION INFORMATION:  
63  
64 (A) TELEPHONE: (213) 489-1600  
65 (B) TELEFAX: (213) 955-0440  
66 (C) TELEX: 67-3510  
67  
68  
69  
70  
71 (2) INFORMATION FOR SEQ ID NO: 1:  
72  
73 (i) SEQUENCE CHARACTERISTICS:  
74  
75 (A) LENGTH: 6177 base pairs  
76 (B) TYPE: nucleic acid  
77 (C) STRANDEDNESS: double  
78 (D) TOPOLOGY: linear  
79  
80 (ii) MOLECULE TYPE: nucleic acid  
81  
82 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:  
83  
84 CTAGAGTCGA CCTGCAGCCC AAGCTCTCGA GGGATCCTGA GAACTTCAGG GTGAGTTTGG 60  
85 GGACCCCTTGA TTGTTCTTTC TTTTTCGCTA TTGTAAAATT CATGTTATAT GGAGGGGGCA 120  
86 AAGTTTTCAG GGTGTTGTTT AGAATGGGAA GATGTCCCTT GTATCACCAT GGACCCTCAT 180  
87 GATAATTTTG TTTCTTTCAC TTTCTACTCT GTTGACAACC ATTGTCTCCT CTTATTTTCT 240  
88 TTTTCATTTTC TGTAACTTT TCGTTAAACT TTAGCTTGCA TTTGTAACGA ATTTTAAAT 300  
89 TCACTTTTGT TTATTTGTCA GATTGTAAGT ACTTCTCTA ATCACTTTTT TTTCAAGGCA 360  
90 ATCAGGGTAT ATTATATTGT ACTTCAGCAC AGTTTTAGAG AACAATTGTT ATAATTAAAT 420  
91 GATAAGGTAG AATATTTCTG CATATAAATT CTGGCTGGCG TGGAAATATT CTTATTGGTA 480  
92 GAAACAACATA CATCCTGGTC ATCATCCTGC CTTTCTCTTT ATGGTTACAA TGATATACAC 540  
93 TGTTTGAGAT GAGGATAAAA TACTCTGAGT CCAAACCGGG CCCCTCTGCT AACCATGTTC 600  
94 ATGCCTTCTT CTTTTTCCTA CAGCTCCTGG GCAACGTGCT GGTTGTTGTG CTGTCTCATC 660  
95 ATTTTGGCAA AGAATTCACCT CCTCAGGTGC AGGCTGCCTA TCAGAAGGTG GTGGCTGGTG 720  
96 TGGCCAATGC CCTGGCTCAC AAATACCACT GAGATCTTTT TCCCCTGACC AAAAATTATG 780  
97 GGGACATCAT GAAGCCCTT GAGCATCTGA CTTCTGGCTA ATAAAGGAAA TTTATTTTCA 840  
98 TTGCAATAGT GTGTTGGAAT TTTTGTGTC TCTCACTCGG AAGGACATAT GGGAGGGCAA 900  
99 ATCATTTAAA ACATCAGAAT GAGTATTTGG TTTAGAGTTT GGCAACATAT GCCATATGCT 960

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100	GGCTGCCATG	AACAAAGGTG	GCTATAAAGA	GGTCATCAGT	ATATGAAACA	GGCCCCTGCT	1020
101	GTCCATTCT	TATTCCATAG	AAAAGCCTTG	ACTTGAGGTT	AGATTTTTTTT	TATATTTTGT	1080
102	TTTGTGTTAT	TTTTTCTTTT	AACATCCCTA	AAATTTTCCT	TACATGTTTT	ACTAGCCAGA	1140
103	TTTTTCTCCT	TCTCCTGACT	ACTCCAGTC	ATAGCTGTCC	CTCTTCTCTT	ATGAACTCGA	1200
104	GGAGCTTTTT	GCAAAAGCCT	AGGCCTCCAA	AAAAGCCTCC	TCACTACTTC	TGGAATAGCT	1260
105	CAGAGGCCGA	GGCGGCCTCG	GCCTCTGCAT	AAATAAAAAA	AATTAGTCAG	CCATGGGGCG	1320
106	GAGAATGGGC	GGAAGTGGGC	GGAGTTAGGG	GCGGGATGGG	CGGAGTTAGG	GGCGGGACTA	1380
107	TGGTTGCTGA	CTAATTGAGA	CTGCATTAAT	GAATCGGCCA	ACGCGCGGGG	AGAGGCGGTT	1440
108	TGCGTATTGG	GCGCTCTTCC	GCTTCCTCGC	TCACTGACTC	GCTGCGCTCG	GTCGTTCCGC	1500
109	TGCGGCGAGC	GGTATCAGCT	CACTCAAAGG	CGGTAATACG	GTTATCCACA	GAATCAGGGG	1560
110	ATAACGCAGG	AAAGAACATG	TGAGCAAAAG	GCCAGCAAAA	GGCCAGGAAC	CGTAAAAAGG	1620
111	CCGCGTTGCT	GGCGTTTTTC	CATAGGCTCC	GCCCCCTGGA	CGAGCATCAC	AAAAATCGAC	1680
112	GCTCAAGTCA	GAGGTGGCGA	AACCCGACAG	GACTATAAAG	ATACCAGGCG	TTTCCCCCTG	1740
113	GAAGCTCCCT	CGTGCGCTCT	CCTGTTCCGA	CCCTGCCGCT	TACCGGATAC	CTGTCCGCTT	1800
114	TTCTCCCTTC	GGGAAGCGTG	GCGCTTCTTC	AATGCTCACG	CTGTAGGTAT	CTCAGTTCGG	1860
115	TGTAGGTCGT	TGCTCCAAG	CTGGGCTGTG	TGCACGAACC	CCCCGTTTCA	CCCGACCGCT	1920
116	GCGCCTTATC	CGGTAACAT	CGTCTTGAGT	CCAACCCGGT	AAGACACGAC	TTATCGCCAC	1980
117	TGGCAGCAGC	CACTGGTAAC	AGGATTAGCA	GAGCGAGGTA	TGTAGGCGGT	GCTACAGAGT	2040
118	TCTTGAAGTG	GTGGCCTAAC	TACGGCTACA	CTAGAAGGAC	AGTATTTGGT	ATCTGCGCTC	2100
119	TGCTGAAGCC	AGTTACCTTC	GGAAAAAGAG	TTGGTAGCTC	TTGATCCGGC	AAACAAACCA	2160
120	CCGCTGGTAG	CGGTGGTTTT	TTTGTTTGCA	AGCAGCAGAT	TACGCGCAGA	AAAAAAGGAT	2220
121	CTCAAGAAGA	TCTTTTGATC	TTTTCTACGG	GGTCTGACGC	TCAGTGGAAC	GAAAACTCAC	2280
122	GTTAAGGGAT	TTTGGTCATG	AGATTATCAA	AAAGGATCTT	CACCTAGATC	CTTTTAAATT	2340
123	AAAAATGAAG	TTTTAAATCA	ATCTAAAGTA	TATATGAGTA	AACTTGGTCT	GACAGTTACC	2400
124	AATGCTTAAT	CAGTGAGGCA	CCTATCTCAG	CGATCTGTCT	ATTTCTGTTCA	TCCATAGTTG	2460
125	CCTGACTCCC	CGTCGTGTAG	ATAACTACGA	TACGGGAGGG	CTTACCATCT	GGCCCCAGTG	2520
126	CTGCAATGAT	ACCGCGAGAC	CCACGCTCAC	CGGCTCCAGA	TTTATCAGCA	ATAAACCAGC	2580
127	CAGCCGGAAG	GGCCGAGCGC	AGAAGTGGTC	CTGCAACTTT	ATCCGCTCTC	ATCCAGTCTA	2640
128	TTAATTGTTG	CCGGGAAGCT	AGAGTAAGTA	GTTCCGCACT	TAATAGTTTG	CGCAACGTTG	2700
129	TTGCCATTGG	TACAGGCATC	GTGGTGTCAC	GCTCGTCGTT	TGGTATGGCT	TCATTCAGCT	2760
130	CCGCTTCCCA	ACGATCAAGG	CGAGTTACAT	GATCCCCCAT	GTTGTGCAAA	AAAGCGGTTA	2820
131	GCTCCTTCGG	TCCTCCGATC	GTTGTCAGAA	GTAAGTTGGC	CGCAGTGTTA	TCACTCATGG	2880
132	TTATGGCAGC	ACTGCATAAT	TCTCTTACTG	TCATGCCATC	CGTAAGATGC	TTTTCTGTGA	2940
133	CTGGTGAGTA	CTCAACCAAG	TCATTCTGAG	AATAGTGTAT	GCGGCGACCG	AGTTGCTCTT	3000
134	GGCCGGCGTC	AATACGGGAT	AATACCGCGC	CACATAGCAG	AACTTTAAAA	GTGCTCATCA	3060
135	TTGGAAAACG	TTCTTCGGGG	CGAAAACCTC	CAAGGATCTT	ACCGCTGTTG	AGATCCAGTT	3120
136	CGATGTAACC	CACTCGTGCA	CCCAACTGAT	CTTCAGCATC	TTTTACTTTC	ACCAGCGTTT	3180
137	CTGGGTGAGC	AAAAACAGGA	AGGCAAAATG	CCGCAAAAAA	GGGAATAAGG	GCGACACGGA	3240
138	AATGTTGAAT	ACTCATACTC	TTCTTTTTTC	AATATTATTG	AAGCATTTAT	CAGGGTTATT	3300
139	GTCTCATGAG	CGGATACATA	TTTGAATGTA	TTTAGAAAAA	TAAACAAATA	GGGGTTCCGC	3360
140	GCACATTTCC	CCGAAAAGTG	CCACCTGACG	TCTAAGAAAC	CATTATTATC	ATGACATTAA	3420
141	CCTATAAAAA	TAGGCGTATC	ACGAGGCCCT	TTCGTCTTCA	AGCTGCCTCG	CGCGTTTCGG	3480
142	TGATGACGGT	GAAAACCTCT	GACACATGCA	GCTCCCGGAG	ACGGTCACAG	CTTGCTGTGA	3540
143	AGCGGATGCC	GGGAGCAGAC	AAGCCCGTCA	GGGCGCGTCA	GCGGGTGTTG	GCGGGTGTCG	3600
144	GGGCGCAGCC	ATGACCCAGT	CACGTAGCGA	TAGCGGAGTT	GGCTTAACTA	TGCGGCATCA	3660
145	GAGCAGATTG	TACTGAGAGT	GCACCATATC	GACGCTCTCC	CTTATGCGAC	TCCTGCATTA	3720
146	GGAAGCAGCC	CAGTAGTAGG	TTGAGGCCGT	TGAGCACCGC	CGCCGCAAGG	AATGGTGCTG	3780
147	GCTTATCGAA	ATTAATCGAC	TCACTATAGG	GAGACCCGAA	TTGAGCTCG	CCCCGTTACA	3840
148	TAACTTACGG	TAAATGGCCC	GCCTGGCTGA	CCGCCAACG	ACCCCGCCC	ATTGACGTCA	3900
149	ATAATGACGT	ATGTTCCCAT	AGTAACGCCA	ATAGGGACCT	TCCATTGACG	TCAATGGGTG	3960
150	GAGTATTTAC	GGTAAACTGC	CCACTTGGCA	GTACATCAAG	TGTATCATAT	CCCAAGTACG	4020
151	CCCCCTATTG	ACGTCAATGA	CGGTAAATGG	CCCGCTGGC	ATTATGCCCA	GTACATGACC	4080
152	TTATGGGACT	TTCTACTTGG	GCAGTACATC	TACGTATTAG	TCATCGCTAT	TACCATGGTG	4140

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153	ATGCGGTTTT	GGCAGTACAT	CAATGGGCGT	GGATAGCGGT	TTGACTCACG	GGGATTTCCA	4200
154	AGTCTCCACC	CCATTGACGT	CAATGGGAGT	TTGTTTTGGC	ACCAAAATCA	ACGGGACTTT	4260
155	CCAAAATGTC	GTAACAACTC	CGCCCCATTG	ACGCAAATGG	GCGGTAGGCG	TGTACGGTGG	4320
156	GAGGTCTATA	TAAGCAGAGC	TCGTTTAGTG	AACCGTCAGA	TCGCCTGGAG	ACGCCATCCA	4380
157	CGCTGTTTTG	ACCTCCATAG	AAGACACCGG	GACCGATCCA	GCCTCCGCGG	GATCTTGGTG	4440
158	GCGTGAAACT	CCCGCACCTC	TTCGGCCAGC	GCCTTGTAGA	AGCGCGTATG	GCTTCGTGGG	4500
159	GATCCCCCAA	AGAATCCTTA	GCTCCCCCTG	GTAGAGACGA	AGTCCCTGGC	AGTTTGCTTG	4560
160	GCCAAGGGAG	GGGGAGCGTA	ATGGACTTTT	ATAAAAGCCT	GAGGGGAGGA	GCTACAGTCA	4620
161	AGGTTTCTGC	ATCTTCGCCC	TCAGTGGCTG	CTGCTTCTCA	GGCAGATTCC	AAGCAGCAGA	4680
162	GGATTCTCCT	TGATTTCTCG	AAAGGCTCCA	CAAGCAATGT	GCAGCAGCGA	CAGCAGCAGC	4740
163	AGCAGCAGCA	GCAGCAGCAG	CAGCAGCAGC	AGCAGCAGCA	GCAGCAGCCA	GGCTTATCCA	4800
164	AAGCCGTTTC	ACTGTCCATG	GGGCTGTATA	TGGGAGAGAC	AGAAACAAAA	GTGATGGGGA	4860
165	ATGACTTGGG	CTACCCACAG	CAGGGCCAAC	TTGGCCTTTC	CTCTGGGGAA	ACAGACTTTC	4920
166	GGCTTCTGGA	AGAAAGCATT	GCAAACCTCA	ATAGGTCGAC	CAGCGTTCCA	GAGAACCCCA	4980
167	AGAGTTCAAC	GTCTGCAACT	GGGTGTGCTA	CCCCGACAGA	GAAGGAGTTT	CCCAAACTC	5040
168	ACTCGGATGC	ATCTTCAGAA	CAGCAAAATC	GAAAAAGCCA	GACCGGCACC	AACGGAGGCA	5100
169	GTGTGAAATT	GTATCCCACA	GACCAAAGCA	CCTTTGACCT	CTTGAAGGAT	TTGGAGTTTT	5160
170	CCGCTGGGTC	CCCAAGTAAA	GACACAAACG	AGAGTCCCTG	GAGATCAGAT	CTGTTGATAG	5220
171	ATGAAAACCT	GCTTTCTCCT	TTGGCGGGAG	AAGATGATCC	ATTCCTTCTC	GAAGGGAACA	5280
172	CGAATGAGGA	TTGTAAGCCT	CTTATTTTAC	CGGACACTAA	ACCTAAAATT	AAGGATACTG	5340
173	GAGATACAAT	CTTATCAAGT	CCCAGCAGTG	TGGCACTACC	CCAAGTGAAA	ACAGAAAAAG	5400
174	ATGATTTTCA	TGAACCTTTC	ACCCCCGGGG	TAATTAAGCA	AGAGAACTG	GGCCAGTTT	5460
175	ATTGTCAGGC	AAGCTTTTCT	GGGACAAATA	TAATTGGTAA	TAAAATGTCT	GCCATTTCTG	5520
176	TTCATGGTGT	GAGTACCTCT	GGAGGACAGA	TGTACCACTA	TGACATGAAT	ACAGCATCCC	5580
177	TTTCTCAGCA	GCAGGATCAG	AAGCCTGTTT	TTAATGTCAT	TCCACCAATT	CCTGTTGGTT	5640
178	CTGAAAACCT	GAATAGGTGC	CAAGGCTCCG	GAGAGGACAG	CCTGACTTCC	TTGGGGGCTC	5700
179	TGAACTTCCC	AGGCCGGTCA	GTGTTTTCTA	ATGGGTACTC	AAGCCCTGGA	ATGAGACCAG	5760
180	ATGTAAGCTC	TCCTCCATCC	AGCTCGTCAG	CAGCCACGGG	ACCACCTCCC	AAGCTCTGCC	5820
181	TGGTGTGCTC	CGATGAAGCT	TCAGGATGTC	ATTACGGGGT	GCTGACATGT	GGAAGCTGCA	5880
182	AAGTATTCTT	TAAAAGAGCA	GTGGAAGGAC	AGCACAATTA	CCTTTGTGCT	GGAAGAAACG	5940
183	ATTGCATCAT	TGATAAAATT	CGAAGGAAAA	ACTGCCAGC	ATGCCGCTAT	CGGAAATGTC	6000
184	TTCAGGCTGG	AATGAACCTT	GAAGCTCGAA	AAACAAAGAA	AAAAATCAAA	GGGATTCAGC	6060
185	AAGCCACTGC	AGGAGTCTCA	CAAGACACTT	CGGAAAATCC	TAACAAAACA	ATAGTTCCTG	6120
186	CAGCATTACC	ACAGCTCACC	CCTACCTTGG	TGTCCTGCT	GGAGGTGATT	GAACCCG	6177

(2) INFORMATION FOR SEQ ID NO: 2:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH:	98 base pairs
(B) TYPE:	nucleic acid
(C) STRANDEDNESS:	single
(D) TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

203	GTACGTTTTAA	ACGCGGCGCG	CCGTCGACCT	GCAGAAGCTT	ACTAGTGGTA	CCCCATGGAG	60
204	ATCTGGATCC	GAATTCACGC	GTTCTAGATT	AATTAAGC			98

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209 (2) INFORMATION FOR SEQ ID NO: 3:

210

211 (i) SEQUENCE CHARACTERISTICS:

212

213 (A) LENGTH: 98 base pairs

214 (B) TYPE: nucleic acid

215 (C) STRANDEDNESS: single

216 (D) TOPOLOGY: linear

217

218 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

219

220 GGCCGCTTAA TTAATCTAGA ACGCGTGAAT TCGGATCCAG ATCTCCATGG GGTACCACTA 60

221 GTAAGCTTCT GCAGGTCGAC GGC GCGCCGC GTTTAAAC 98

222

223

224

225 (2) INFORMATION FOR SEQ ID NO: 4:

226

227 (i) SEQUENCE CHARACTERISTICS:

228

229 (A) LENGTH: 51 base pairs

230 (B) TYPE: nucleic acid

231 (C) STRANDEDNESS: single

232 (D) TOPOLOGY: linear

233

234 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

235

236 GATCTCGGTC TCCAACAGCA ACAGCAACAG CAACAGCAAC AGGGTCTTCT G 51

237

238

239

240 (2) INFORMATION FOR SEQ ID NO: 5:

241

242 (i) SEQUENCE CHARACTERISTICS:

243

244 (A) LENGTH: 51 base pairs

245 (B) TYPE: nucleic acid

246 (C) STRANDEDNESS: single

247 (D) TOPOLOGY: linear

248

249

250

251 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

252

253 GATCCAGAAG ACCCTGTTGC TGTTGCTGTT GCTGTTGCTG TTGGAGACCG A 51

254

255

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**SEQUENCE VERIFICATION REPORT**  
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Original Text